

A FREQUENCY-DOMAIN EQUALIZER FOR TERRESTRIAL
DIGITAL TV RECEPTION

ABSTRACT OF THE DISCLOSURE

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A single integrated circuit multi-standard demodulator includes an adaptive inverse channel estimator for frequency domain equalization which employs a recursive least square cost function in estimating the inverse channel from the received signal and an error estimate. Utilizing a diagonal correlation matrix, the solution to may be determined utilizing fewer computational resources than required by conventional frequency domain equalizers, shifting from a computational intensive to memory intensive implementation. The memory requirement is fully satisfied by memory available within conventional OFDM decoders, and the necessary computational resources may be readily mapped to the resources available within such decoders, improving integrated circuit cost-effectiveness of the multi-standard demodulator.